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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,624	02/06/2004	Chi-Ming Cheng	1176/201	8352

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EXAMINER	
MCPHERSON, JOHN A	
ART UNIT	**PAPER NUMBER**
1756	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/773,624	CHENG, CHI-MING	
	Examiner	Art Unit	
	John A. McPherson	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 8, 9, 12, 14 and 19-23 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0131955 (US '955). US '955 discloses a method of fabricating a color filter comprising the steps of forming a red color block, and green color block, and a blue color block on a transparent substrate; coating a black photosensitive material onto the substrate so as to form a black layer covering the red, green and blue color blocks and to fill the spaces there between (wherein the spaces correspond to the opening portions of the present invention); polishing to planarize the black layer into a black matrix and to remove the horn regions of the color blocks; and forming a transparent electrode on the color filter. See paragraphs [0024]-[0033] and Figures 2A-C.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-5 and 7-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,501,521 (US '521) in view of JP 9-230124 (JP '124). US '521 discloses a color filter and a process of making the same, wherein the color filter is provided with openings filed with a transparent resin. Furthermore, a flattening film is layered on the surface of the color filter for flattening surface irregularities of the color filter (i.e. planarizing the color filter). See the abstract and column 4, lines 40-67. However, US '521 discloses utilizing a flattening film to planarize the color filter, not planarizing the colored portions with respect to the filled opening portion (e.g. by polishing). Additionally, with respect to claims 15-18, US '521 does not disclose colored portions extending over underlying structures (e.g. light blocking portions) which cause unevenness.

JP '124 discloses a process for making a color filter comprising the steps of patterning adjacent color filters so as to overlap with each other on a light shielding layer, and planarizing the overlap parts by polishing, so as to produce a planar color filter without the need for forming an overcoating. See the abstracts; [Claim 1] and paragraphs [0006]-[0010] of the computer-generated translation; and Figures 2-3. It would have been obvious to one skilled in the requisite art to planarize the color filters

by polishing, as taught by JP '521, in the method of US '521 because it is taught that polishing provides for a planar color filter, even when formed over a light shielding layer, without the need for the additional process steps required to form an overcoating.

4. Claims 1 and 3-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,501,521 (US '521) in view of JP 9-230124 (JP '124), further in view of Applicant's discussion of the prior art in the specification. The disclosures of US '521 and JP '124 are discussed above in paragraph 3. However, neither US '521 nor JP '124 disclose forming the layer of transparent material which fills the openings portions by spin coating. Applicant states that it is known in the prior art to provide a transparent resist over the surface of a color filter substrate to fill opening regions by spin coating. See page 2, lines 15-18. It would have been obvious to one skilled in the requisite art to utilize spin coating as the method for providing the transparent resin which fills the openings in the process of US '521 in view of JP '124, because it has been admitted by Applicant that spin coating is recognized in the prior art as a suitable method for forming a transparent layer over a color filter so as to fill openings therein.

Response to Arguments

5. Applicant's arguments filed 1/20/06 have been fully considered but they are not persuasive.

Applicant argues that the finality of the Office Action dated 8/19/05 was premature because the Examiner presented a new ground of rejection based on a

different interpretation of US '521. Specifically, Applicant argues that the Examiner stated a new basis for rejection, referring for the first time to an embodiment wherein deep openings are first filled with a transparent resin, then covered with a flattening film. However, this is the embodiment to which the Examiner referred in the original rejection, as set forth in description of US '521 found in paragraph 2 of the Office Action mailed 3/21/05. This issue is now moot, as the Examiner has reopened prosecution because, as successfully argued by Applicant (see Argument 3(b) of the Appeal Brief filed 1/20/06), neither US '521 nor JP '124 disclose providing the transparent resin by spin-coating. A new 35 USC 103 rejection, utilizing Applicants discussion of the prior art to supply the missing teaching, is provide above in paragraph 4.

With respect to the rejection over US '521 in view of JP '124, Applicant argues that US '521 does not teach first filling the color filter openings with resin, and then applying a flattening film. However, US '521 discloses that a flattening film layered on the surface of the color filter for flattening surface irregularities of the color filter will also fill the openings if they are shallow, however when the openings are deep the step around each opening cannot be eliminated by the flattening film unless the openings are filled with a transparent resin. See column 4, lines 40-60; column 11, line 26 to column 12, line 33; and Figure 8. Therefore, it is clear that US '521 discloses utilizing a transparent resin to fill deep openings in combination with a flattening film for flattening surface irregularities of the color filter. Furthermore, Applicant argues that even if the color filter openings are first partially filled with resin and then covered with a flattening film, there is still no motivation or suggestion for planarization of the resultant structure.

However, JP '124 teaches polishing as an alternative to providing an overcoat. See the abstracts; [Claim 1] and paragraphs [0006]-[0010] of the computer generated translation; and Figures 2-3.

With respect to the rejection over US '521 in view of JP '124, Applicant further argues that US '521 and JP '124 are directed to mutually exclusive paths and reach different solutions to different problems. However, both US '521 and JP '124 are directed to planarizing color filters, and JP '124 clearly teaches that polishing is an improvement as compared to providing an overcoat as the solution to this problem. See the abstracts; [Claim 1] and paragraphs [0006]-[0010] of the computer generated translation; and Figures 2-3.

With respect to the rejection over US '521 in view of JP '124, Applicant further argues that JP '124 fails to teach color portions being planarized with respect to the filled openings portions. However, polishing the surface of the color filter, as taught by JP '124, as an alternative to providing the flattening layer (i.e. see overcoat layer **9** in Figure 8) in the process of US '521 would clearly result in the color portions **10R**, **10G**, and **10B** being planarized with respect to the filled opening portions **20R**, **20G**, and **20B**.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. McPherson whose telephone number is (571) 272-1386. The examiner can normally be reached on Monday through Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John A. McPherson
Primary Examiner
Art Unit 1756

JAM
4/3/06